

im Vertrieb von

CAMBOARD Electronics



KRAMER ELECTRONICS LTD.

USER MANUAL

MODELS:

SID-X1

Step-in Commander

P/N: 2900-300754 Rev 5

www.camboard.de

Tel. 07131 911201 ce-info@camboard.de

Fax 07131 911203

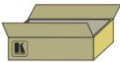


SID-X1 Step-in Commander Quick Start Guide

This guide helps you install and use your product for the first time. For more detailed information, go to http://www.kramerelectronics.com/support/product_downloads.asp to download the latest manual or scan the QR code on the left.

Step 1: Check what's in the box

- ☒ **SID-X1** Step-in Commander
- ☒ 1 Power adapter (12V DC output)
- ☒ 4 Rubber feet
- ☒ Quick Start Guide



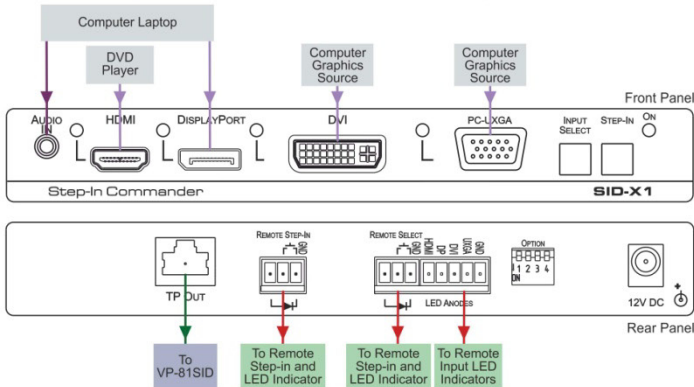
Save the original box and packaging materials in case your Kramer product needs to be returned to the factory for service.

Step 2: Install the SID-X1

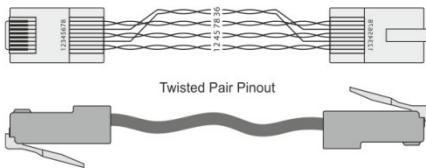
Mount the device in a rack (using the optional **RK-T2B** rack adapter available for purchase) or attach the rubber feet and place it on a shelf.

Step 3: Connect the inputs and outputs

Always switch off the power to all devices before connecting them to your **SID-X1**.

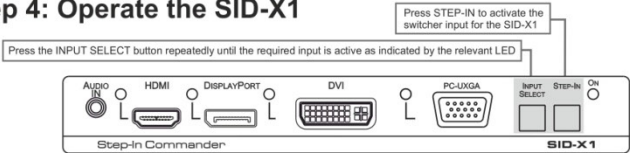


For best results, we recommend that you always use Kramer high-performance cables when connecting AV equipment to the **SID-X1**. For optimum range and performance, use Shielded Twisted Pair (STP), non-skew free cable, such as the Kramer **BC-DGKat623** or **BC-DGKat7a23**.



EIA / TIA 568B	
PIN	Wire Color
1	Orange / White
2	Orange
3	Green / White
4	Blue
5	Blue / White
6	Green
7	Brown / White
8	Brown

Step 4: Operate the SID-X1



Optional: Lock the current EDID if required.

Step 5: Connect the power

Connect the power adapter to the **SID-X1** and plug the adapter into the mains electricity.

Note: Operation is fully automatic - no manual adjustment is needed.



Contents

1	Introduction	1
2	Getting Started	2
2.1	Achieving the Best Performance	2
2.2	Shielded Twisted Pair/Unshielded Twisted Pair	3
2.3	Recycling Kramer Products	3
3	Overview	4
4	Defining the SID-X1 Step-in Commander	5
5	Connecting the SID-X1	7
5.1	Connecting the Remote Step-In Switch and LED	8
5.2	Connecting the Remote Select Switch and LED	9
5.3	Connecting the Remote Input Selection LEDs	10
5.4	Audio Mode Selection	11
5.5	Locking the EDID	11
6	Operating the SID-X1	12
6.1	Selecting an Input	12
6.2	Taking Control of the Switcher Input	12
6.3	Audio Stream Priority	12
7	Wiring the Twisted Pair RJ-45 Connectors	13
8	Technical Specifications	14
9	Default EDID	15
9.1	HDMI, DisplayPort and DVI	15
9.2	PC-UXGA	16

Figures

Figure 1:	SID-X1 Step-in Commander Front Panel	5
Figure 2:	SID-X1 Step-in Commander Rear Panel	6
Figure 3:	Connecting the SID-X1 Step-in Commander	7
Figure 4:	REMOTE STEP-IN Switch and LED Wiring	8
Figure 5:	REMOTE SELECT Switch and LED Wiring	9
Figure 6:	Remote Input Indicator LED Wiring	10
Figure 7:	Example Remote Input Indicator LED Wiring for the DVI Input	10
Figure 8:	TP Pinout Wiring	13

1 Introduction

Welcome to Kramer Electronics! Since 1981, Kramer Electronics has been providing a world of unique, creative, and affordable solutions to the vast range of problems that confront video, audio, presentation, and broadcasting professionals on a daily basis. In recent years, we have redesigned and upgraded most of our line, making the best even better!

Our 1,000-plus different models now appear in 11 groups that are clearly defined by function: GROUP 1: Distribution Amplifiers; GROUP 2: Switchers and Routers; GROUP 3: Control Systems; GROUP 4: Format/Standards Converters; GROUP 5: Range Extenders and Repeaters; GROUP 6: Specialty AV Products; GROUP 7: Scan Converters and Scalers; GROUP 8: Cables and Connectors; GROUP 9: Room Connectivity; GROUP 10: Accessories and Rack Adapters and GROUP 11: Sierra Video Products.

Thank you for purchasing the Kramer TOOLS® **SID-X1** *Step-in Commander* and which are ideal for:

- Display systems requiring simple input selection
- Remote monitoring of computer activity in schools and businesses
- Rental/staging applications
- Multimedia and presentation source selection

Each package includes the following items:

- **SID-X1** *Step-in Commander*
- Power adapter (12V DC output)
- This user manual

Download up-to-date Kramer user manuals from <http://www.kramerelectronics.com>

2 Getting Started

We recommend that you:

- Unpack the equipment carefully and save the original box and packaging materials for possible future shipment
- Review the contents of this user manual
- Use Kramer high performance high resolution cables



Go to <http://www.kramerelectronics.com> to check for up-to-date user manuals, application programs, and to check if firmware upgrades are available (where appropriate).



Caution: No operator serviceable parts inside the unit

Warning: Use only the Kramer Electronics input power wall adapter that is provided with the unit

Warning: Disconnect the power and unplug the unit from the wall before installing

2.1 Achieving the Best Performance

To achieve the best performance:

- Use only good quality connection cables to avoid interference, deterioration in signal quality due to poor matching, and elevated noise levels (often associated with low quality cables)
- Do not secure the cables in tight bundles or roll the slack into tight coils
- Avoid interference from neighboring electrical appliances that may adversely influence signal quality
- Position your Kramer **SID-X1** away from moisture, excessive sunlight and dust

2.2 Shielded Twisted Pair/Unshielded Twisted Pair

Kramer engineers have developed special twisted pair cables to best match our digital twisted pair products; the Kramer **BC-DGKat623** (CAT 6 23 AWG cable), and the Kramer **BC-DGKat7a23** (CAT 7a 23 AWG cable). These specially built cables significantly outperform regular CAT 6 and CAT 7a cables.

2.3 Recycling Kramer Products

The Waste Electrical and Electronic Equipment (WEEE) Directive 2002/96/EC aims to reduce the amount of WEEE sent for disposal to landfill or incineration by requiring it to be collected and recycled. To comply with the WEEE Directive, Kramer Electronics has made arrangements with the European Advanced Recycling Network (EARN) and will cover any costs of treatment, recycling and recovery of waste Kramer Electronics branded equipment on arrival at the EARN facility. For details of Kramer's recycling arrangements in your particular country go to our recycling pages at <http://www.kramerelectronics.com/support/recycling/>.

3 Overview

The **SID-X1** accepts an HDMI, DisplayPort, DVI and PC graphics video input, as well as an unbalanced stereo audio input (which is embedded into the output signal), and transmits the signal via TP (Twisted Pair) cable to a compatible switcher (for example, the **VP-81SID**). When the **SID-X1** is connected to a switcher, it also controls the input and output selection of the switcher.

In particular the **SID-X1**:

- Supports DDC (Display Data Channel) communication between the selected input and output on 15-pin HD connector pins 12 and 15
- Supports HDMI with Deep Color, x.v.Color™ and 3D
- Is HDCP compliant—works with sources that support HDCP repeater mode
- Can be installed up to 50m (164ft) from the switcher
- Features automatic live input detection when connected to a single input
- Lockable EDID

You can control the **SID-X1** using the front panel buttons, or remotely via contact closure switches.

4

Defining the SID-X1 Step-in Commander

Figure 1 defines the front panel of the **SID-X1**.

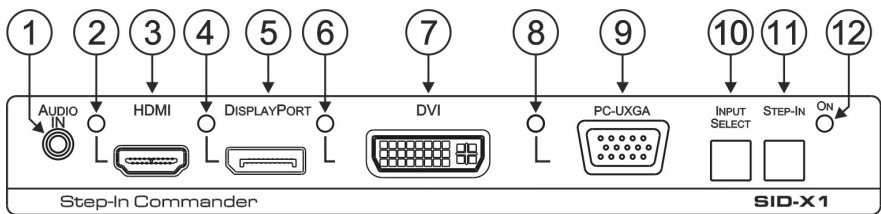


Figure 1: SID-X1 Step-in Commander Front Panel

#	Feature	Function
1	AUDIO IN 3.5mm Mini Jack	Connect to an unbalanced stereo audio source
2	HDMI LED	Lights green when the HDMI input is selected
3	HDMI Connector	Connect to an HDMI source
4	DisplayPort LED	Lights green when the DisplayPort input is selected
5	DisplayPort Connector	Connect to a DisplayPort source
6	DVI LED	Lights green when the DVI input is selected
7	DVI Connector	Connect to a DVI source
8	PC-UXGA LED	Lights green when the PC-UXGA input is selected
9	PC-UXGA 15-pin HD Connector (F)	Connect to a PC graphics source
10	INPUT SELECT Button	Press repeatedly to cycle and select one of the inputs to switch to the output
11	STEP-IN Button	Press to activate the input on the switcher that the SID-X1 is connected to
12	ON LED	Lights green when the device is powered on

Figure 2 defines the rear panel of the **SID-X1**.

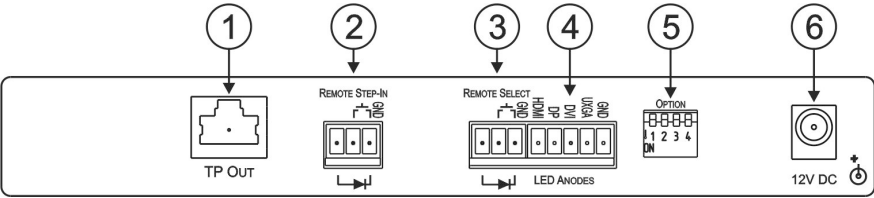


Figure 2: SID-X1 Step-in Commander Rear Panel

#	Feature	Function
1	TP OUT RJ-45 Connector	Connect to a compatible switcher, for example, VP-81SID using CAT 6 or higher specification cable
2	REMOTE STEP-IN 3-way Terminal Block	Connect to the remote, contact closure step-in switch and LED (see Section 5.1)
3	REMOTE SELECT 3-way Terminal Block	Connect to the remote, contact closure input selection switch and LED (see Section 5.2)
4	HDMI, DP, DVI, UXGA, GND, LED ANODES 5-way Terminal Block	Connect to the remote input indicator LEDs (see Section 5.3). Note: All LED supplies include a current limiting resistor and are designed to work with any standard LED
5	OPTION DIP-switches	DIP-switch 1, 2—audio mode selection (See Section 5.4) DIP-switch 3—no function DIP-switch 4—EDID lock (See Section 5.4)
6	12V DC Power Connector	Connect to supplied power adapter, center pin positive

5 Connecting the SID-X1



Switch off the power to all devices before connecting them to your **SID-X1**. After connecting your **SID-X1** connect the power to other devices.

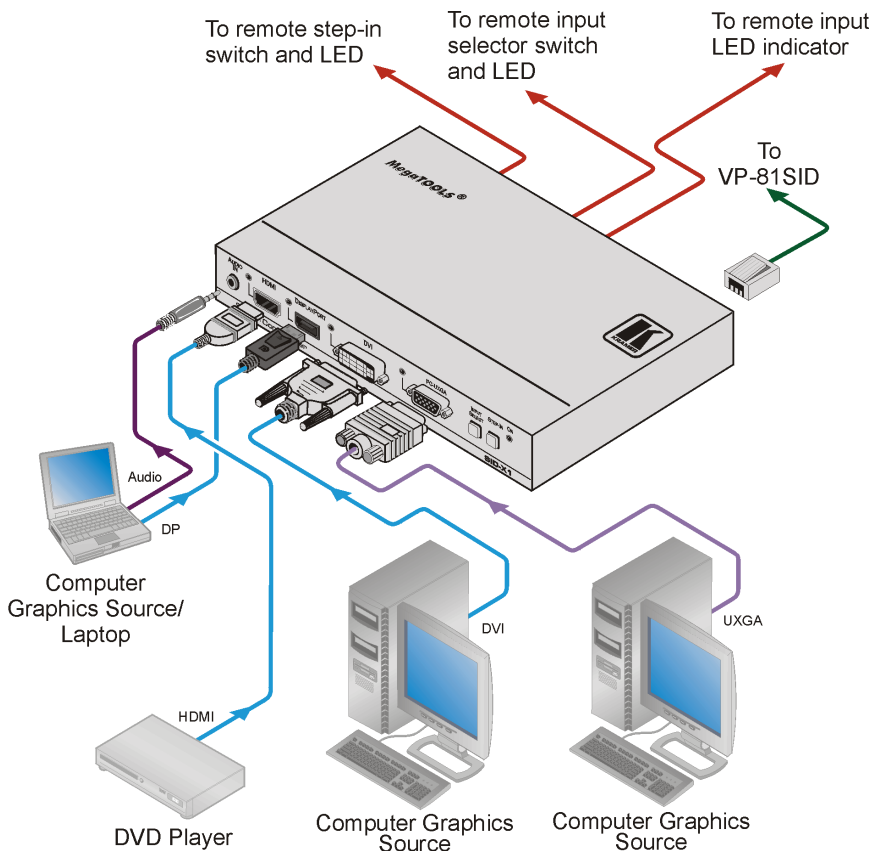


Figure 3: Connecting the SID-X1 Step-in Commander

To connect the SID-X1 and the as illustrated in [Figure 3](#):

1. Connect up to four video sources (HDMI, DisplayPort, DVI and PC graphics) to the video input connectors.

Note: If only one live input is connected, the device automatically detects the live channel and activates it.

2. Connect the unbalanced stereo audio source to the AUDIO IN 3.5mm mini jack connector.
3. Connect the TP OUT RJ-45 connector to a compatible switcher (for example, **VP-81SID**).
4. Optional—Connect the REMOTE STEP-IN 3-way terminal block to a contact closure switch and LED (see [Section 5.1](#)).
5. Optional—Connect the REMOTE SELECT 3-way terminal block to a momentary contact closure switch and LEDs (see [Section 5.2](#)).
6. Optional—Connect the LED ANODES 5-way terminal block to the remote input indicator LEDs (see [Section 5.3](#)).
7. Connect the power adapter to the **SID-X1** and to the mains power.

Note: All LED supplies include a current limiting resistor and are designed to work with any standard LED.

5.1 Connecting the Remote Step-In Switch and LED

You can connect a remote, contact closure step-in switch to take control of the input of the attached switcher, as well as a remote step-in LED to the REMOTE STEP-IN terminal block on the rear panel of the **SID-X1**.

[Figure 4](#) illustrates the connections from the terminal block to the switch and LED.

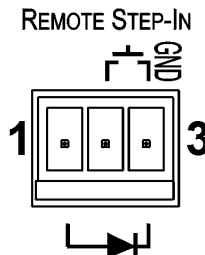


Figure 4: REMOTE STEP-IN Switch and LED Wiring

To connect a remote step-in switch and LED as illustrated in the example in [Figure 4](#):

1. Connect pins 2 and 3 from the terminal block to the remote step-in switch.
2. Connect pin 1 from the terminal block to the anode of the remote step-in LED.
3. Connect pin 3 from the terminal block to the cathode of the remote step-in LED.

5.2 Connecting the Remote Select Switch and LED

You can connect a remote, contact closure, input selection switch to activate an input (momentary contact is sufficient to switch inputs), as well as an indicator LED to the terminal block on the rear panel of the **SID-X1**.

[Figure 5](#) illustrates the connections from the terminal block to the switch and LED.

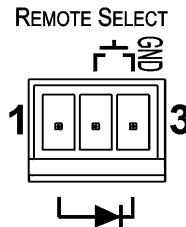


Figure 5: REMOTE SELECT Switch and LED Wiring

To connect a remote selection switch and LED as illustrated in the example in [Figure 5](#):

1. Connect pins 2 and 3 from the terminal block to the remote selection switch.
2. Connect pin 1 from the terminal block to the anode of the remote selection LED.
3. Connect pin 3 from the terminal block to the cathode of the remote selection LED.

5.3 Connecting the Remote Input Selection LEDs

You can connect remote, input selection LEDs to the LED terminal block on the rear panel of the **SID-X1** to indicate which is the active input.

[Figure 6](#) illustrates the connections from the terminal block to the LEDs.

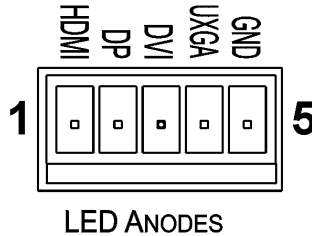


Figure 6: Remote Input Indicator LED Wiring

To connect remote input indicator LEDs:

1. Connect pin 1 from the terminal block to the anode of the remote HDMI indicator LED.
2. Connect pin 2 from the terminal block to the anode of the remote DP indicator LED.
3. Connect pin 3 from the terminal block to the anode of the remote DVI indicator LED (see the example in [Figure 7](#)).
4. Connect pin 4 from the terminal block to the anode of the remote UXGA indicator LED.
5. Connect pin 5 from the terminal block to the cathodes of each LED.

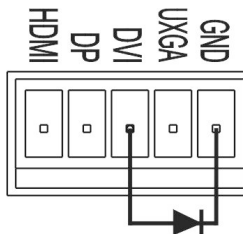


Figure 7: Example Remote Input Indicator LED Wiring for the DVI Input

5.4 Audio Mode Selection

The Option DIP-switches 1 and 2 (see [Section 6.3](#)) control the manner in which audio is handled.

Note: DIP-switch 1 must be set to ON to enable DIP-switch 2 to control the audio mode selection.

DIP-switch	State	Function
1 Auto/Manual Audio Mode	Off (default)	Automatic—if an audio source is connected to the 3.5mm mini jack the analog (external) audio is transmitted. If not, the embedded audio is transmitted
	On	Manual—DisplayPort and HDMI ports always transmit the embedded audio and the VGA always transmits the analog audio. The DVI port audio is defined by DIP-switch 2
2 DVI Audio Source	Off (default)	Only the DVI uses the embedded audio
	On	Only the DVI uses the analog (external) audio

5.5 Locking the EDID

To prevent the stored EDID (either default or read from a device) from being overwritten, set DIP-switch 4 to ON.

Note: The device must be power-cycled after you change DIP-switch 4.

6 Operating the SID-X1

Powering up the **SID-X1** recalls the last settings (that is, the configuration of the device when it was powered down) from the non-volatile memory.

The **SID-X1** inputs can be selected remotely via the **VP-81SID**. For details on operating the **SID-X1** remotely via the **VP-81SID**, see the **VP-81SID** User Manual.

6.1 Selecting an Input

To select an input, press the INPUT SELECT button repeatedly until the required input is active as indicated by the associated LED.

Note: If only one live input is connected, the device automatically detects the live port and activates it. If more than one input is connected, you must select the required input by pressing the INPUT SELECT button until the associated LED lights.

6.2 Taking Control of the Switcher Input

To activate the input of the switcher to which the **SID-X1** is connected, press the STEP-IN button. If the switcher grants the **SID-X1** access to the input, the STEP-IN button lights. If the switcher does not grant access for some reason, the button flashes for a few seconds and then does not light. This may be because the switcher input connected to the **SID-X1** has been set to have a lower priority than the currently active input.

Note: Input priority on the switcher is set using the Kramer Control Software.

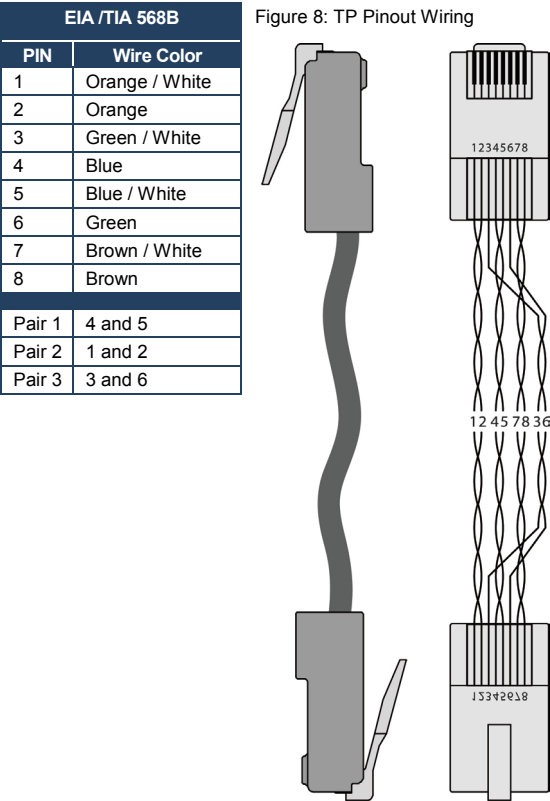
6.3 Audio Stream Priority

By default (see [Section 5.4](#)), an audio source connected to the 3.5mm mini jack Audio Input takes priority over any other audio stream. This means that if there is a cable connected to the 3.5mm mini jack (even without a live signal) and the HDMI and DVI streams contain audio, only the audio source from the 3.5mm audio jack is transmitted over the TP to the switcher.

7

Wiring the Twisted Pair RJ-45 Connectors

When using STP cable, connect/solder the cable shield to the RJ-45 connector shield. [Figure 8](#) defines the TP pinout using a straight pin-to-pin cable with RJ-45 connectors.



Warning: Using a TP cable that is incorrectly wired will cause permanent damage to the device

8

Technical Specifications

INPUTS:	Video:	1 HDMI on an HDMI connector 1 DP on a DisplayPort connector 1 DVI-D on a DVI-I connector 1 VGA on a 15-pin HD (F) connector
	Audio:	1 Unbalanced stereo audio on a 3.5mm mini jack
OUTPUTS:	1 TP on an RJ-45	
STANDARDS:	HDMI with Deep Color, x.v.Color™ and 3D HDCP: Works with sources that support HDCP repeater mode	
MAXIMUM STEP-IN DISTANCE:	50m (164ft) up to 1080p @60Hz	
POWER CONSUMPTION:	12V DC, 800mA	
OPERATING TEMPERATURE:	0° to +40°C (32° to 104°F)	
STORAGE TEMPERATURE:	−40° to +70°C (−40° to 158°F)	
HUMIDITY:	10% to 90%, RHL non-condensing	
DIMENSIONS:	18.8cm x 11.3cm x 2.5cm (7.4" x 4.5" x 1") W, D, H rack-mountable	
WEIGHT:	0.48kg (1.1lbs) approx.	
ACCESSORIES:	Power adapter	
OPTIONS:	19" Rack adapter RK-T2B, RTBUS-12, RTBUS-22, SID-X1BP Kit (substitute black top plate for the SID-X1 to blend in with the color of the modular TBUS-10xl)	

9 Default EDID

Each input on the **SID-X1** is loaded with a factory default EDID.

9.1 HDMI, DisplayPort and DVI

Monitor

Model name..... SID-X1
 Manufacturer..... KRM
 Plug and Play ID..... KRM1200
 Serial number..... 505-709990100
 Manufacture date..... 2011, ISO week 255

EDID revision..... 1.3
 Input signal type..... Digital
 Color bit depth..... Undefined
 Display type..... RGB color
 Screen size..... 520 x 320 mm (24.0 in)
 Power management..... Standby, Suspend, Active off/sleep
 Extension blocs..... 1 (CEA-EXT)

DDC/CI..... n/a

Color characteristics

Default color space..... Non-sRGB
 Display gamma..... 2.20
 Red chromaticity..... Rx 0.674 - Ry 0.319
 Green chromaticity..... Gx 0.188 - Gy 0.706
 Blue chromaticity..... Bx 0.148 - By 0.064
 White point (default).... Wx 0.313 - Wy 0.329
 Additional descriptors... None

Timing characteristics

Horizontal scan range.... 30-83kHz
 Vertical scan range..... 56-76Hz
 Video bandwidth..... 170MHz
 CVT standard..... Not supported
 GTF standard..... Not supported
 Additional descriptors... None
 Preferred timing..... Yes
 Native/preferred timing.. 1280x720p at 60Hz (16:10)
 Modeline..... "1280x720" 74.250 1280 1390 1430 1650 720 725 730 750 +hsync +vsync

Standard timings supported

720 x 400p at 70Hz - IBM VGA
 640 x 480p at 60Hz - IBM VGA
 640 x 480p at 75Hz - VESA
 800 x 600p at 60Hz - VESA
 800 x 600p at 75Hz - VESA
 1024 x 768p at 60Hz - VESA
 1024 x 768p at 75Hz - VESA
 1280 x 1024p at 75Hz - VESA
 1280 x 1024p at 60Hz - VESA STD
 1600 x 1200p at 60Hz - VESA STD
 1152 x 864p at 75Hz - VESA STD

EIA/CEA-861 Information

Revision number..... 3
 IT underscan..... Supported
 Basic audio..... Supported
 YCbCr 4:4:4..... Supported
 YCbCr 4:2:2..... Supported
 Native formats..... 1
 Detailed timing #1..... 1920x1080p at 60Hz (16:10)
 Modeline..... "1920x1080" 148.500 1920 2008 2052 2200 1080 1084 1089 1125 +hsync +vsync
 Detailed timing #2..... 1920x1080i at 60Hz (16:10)

Green chromaticity..... Gx 0.188 - Gy 0.706
 Blue chromaticity..... Bx 0.148 - By 0.064
 White point (default).... Wx 0.313 - Wy 0.329
 Additional descriptors... None

Timing characteristics

Horizontal scan range.... 30-83kHz
 Vertical scan range..... 56-76Hz
 Video bandwidth..... 170MHz
 CVT standard..... Not supported
 GTF standard..... Not supported
 Additional descriptors... None
 Preferred timing..... Yes
 Native/preferred timing.. 1280x720p at 60Hz (16:10)
 Modeline..... "1280x720" 74.250 1280 1390 1430 1650 720 725 730 750 +hsync +vsync

Standard timings supported

720 x 400p at 70Hz - IBM VGA
 640 x 480p at 60Hz - IBM VGA
 640 x 480p at 75Hz - VESA
 800 x 600p at 60Hz - VESA
 800 x 600p at 75Hz - VESA
 1024 x 768p at 60Hz - VESA
 1024 x 768p at 75Hz - VESA
 1280 x 1024p at 75Hz - VESA
 1280 x 1024p at 60Hz - VESA STD
 1600 x 1200p at 60Hz - VESA STD
 1152 x 864p at 75Hz - VESA STD

EIA/CEA-861 Information

Revision number..... 3
 IT underscan..... Supported
 Basic audio..... Supported
 YCbCr 4:4:4..... Supported
 YCbCr 4:2:2..... Supported
 Native formats..... 1
 Detailed timing #1..... 1920x1080p at 60Hz (16:10)
 Modeline..... "1920x1080" 148.500 1920 2008 2052 2200 1080 1084 1089 1125 +hsync +vsync
 Detailed timing #2..... 1920x1080i at 60Hz (16:10)
 Modeline..... "1920x1080" 74.250 1920 2008 2052 2200 1080 1084 1094 1124 interlace +hsync
 +vsync
 Detailed timing #3..... 1280x720p at 60Hz (16:10)
 Modeline..... "1280x720" 74.250 1280 1390 1430 1650 720 725 730 750 +hsync +vsync
 Detailed timing #4..... 720x480p at 60Hz (16:10)
 Modeline..... "720x480" 27.000 720 736 798 858 480 489 495 525 -hsync -vsync

CE video identifiers (VICs) - timing/formats supported

1920 x 1080p at 60Hz - HDTV (16:9, 1:1)
 1920 x 1080i at 60Hz - HDTV (16:9, 1:1)
 1280 x 720p at 60Hz - HDTV (16:9, 1:1) [Native]
 720 x 480p at 60Hz - EDTV (16:9, 32:27)
 720 x 480p at 60Hz - EDTV (4:3, 8:9)
 720 x 480i at 60Hz - Doublescan (16:9, 32:27)
 720 x 576i at 50Hz - Doublescan (16:9, 64:45)
 640 x 480p at 60Hz - Default (4:3, 1:1)
 NB: NTSC refresh rate = (Hz*1000)/1001

CE audio data (formats supported)

LPCM 2-channel, 16/20/24 bit depths at 32/44/48 kHz

CE vendor specific data (VSDB)

IEEE registration number. 0x000C03
 CEC physical address..... 1.1.0.0
 Maximum TMDS clock..... 165MHz

CE speaker allocation data

Channel configuration.... 2.0
 Front left/right..... Yes
 Front LFE..... No
 Front center..... No
 Rear left/right..... No

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Rear center..... No
Front left/right center... No
Rear left/right center... No
Rear LFE..... No

Raw data
00,FF,FF,FF,FF,FF,FF,00,2E,4D,00,12,01,01,01,01,FF,15,01,03,6E,34,20,78,EE,B3,25,AC,51,30,B4,26,
10,50,54,A5,4B,00,81,80,A9,40,71,4F,01,01,01,01,01,01,01,01,01,01,1D,00,72,51,D0,1E,20,6E,28,
55,00,07,44,21,00,00,1E,00,00,00,FF,00,35,30,35,2D,37,30,39,39,39,30,31,30,30,00,00,00,FC,00,53,
49,44,2D,4D,55,4C,54,49,00,00,00,00,00,00,FD,00,38,4C,1E,53,11,00,0A,20,20,20,20,20,00,A0,
02,03,1B,F1,48,10,05,84,03,02,07,16,01,23,09,07,07,65,03,0C,00,11,00,83,01,00,00,02,3A,80,18,71,
38,2D,40,58,2C,45,00,07,44,21,00,00,1E,01,1D,80,18,71,1C,16,20,58,2C,25,00,07,44,21,00,00,9E,01,
1D,00,72,51,D0,1E,20,6E,28,55,00,07,44,21,00,00,1E,8C,0A,D0,8A,20,E0,2D,10,10,3E,96,00,07,44,21,
00,00,18,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,46

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LIMITED WARRANTY

The warranty obligations of Kramer Electronics for this product are limited to the terms set forth below:

What is Covered

This limited warranty covers defects in materials and workmanship in this product.

What is Not Covered

This limited warranty does not cover any damage, deterioration or malfunction resulting from any alteration, modification, improper or unreasonable use or maintenance, misuse, abuse, accident, neglect, exposure to excess moisture, fire, improper packing and shipping (such claims must be presented to the carrier), lightning, power surges, or other acts of nature. This limited warranty does not cover any damage, deterioration or malfunction resulting from the installation or removal of this product from any installation, any unauthorized tampering with this product, any repairs attempted by anyone unauthorized by Kramer Electronics to make such repairs, or any other cause which does not relate directly to a defect in materials and/or workmanship of this product. This limited warranty does not cover cartons, equipment enclosures, cables or accessories used in conjunction with this product.

Without limiting any other exclusion herein, Kramer Electronics does not warrant that the product covered hereby, including, without limitation, the technology and/or integrated circuit(s) included in the product, will not become obsolete or that such items are or will remain compatible with any other product or technology with which the product may be used.

How Long Does this Coverage Last

Seven years as of this printing; please check our Web site for the most current and accurate warranty information.

Who is Covered

Only the original purchaser of this product is covered under this limited warranty. This limited warranty is not transferable to subsequent purchasers or owners of this product.

What Kramer Electronics will do

Kramer Electronics will, at its sole option, provide one of the following three remedies to whatever extent it shall deem necessary to satisfy a proper claim under this limited warranty:

1. Elect to repair or facilitate the repair of any defective parts within a reasonable period of time, free of any charge for the necessary parts and labor to complete the repair and restore this product to its proper operating condition. Kramer Electronics will also pay the shipping costs necessary to return this product once the repair is complete.
2. Replace this product with a direct replacement or with a similar product deemed by Kramer Electronics to perform substantially the same function as the original product.
3. Issue a refund of the original purchase price less depreciation to be determined based on the age of the product at the time remedy is sought under this limited warranty.

What Kramer Electronics will not do Under This Limited Warranty

If this product is returned to Kramer Electronics or the authorized dealer from which it was purchased or any other party authorized to repair Kramer Electronics products, this product must be insured during shipment, with the insurance and shipping charges prepaid by you. If this product is returned uninsured, you assume all risks of loss or damage during shipment. Kramer Electronics will not be responsible for any costs related to the removal or re-installation of this product from or into any installation. Kramer Electronics will not be responsible for any costs related to any setting up this product, any adjustment of user controls or any programming required for a specific installation of this product.

How to Obtain a Remedy under this Limited Warranty

To obtain a remedy under this limited warranty, you must contact either the authorized Kramer Electronics reseller from whom you purchased this product or the Kramer Electronics office nearest you. For a list of authorized Kramer Electronics resellers and/or Kramer Electronics authorized service providers, please visit our web site at www.kramerelectronics.com or contact the Kramer Electronics office nearest you.

In order to pursue any remedy under this limited warranty, you must possess an original, dated receipt as proof of purchase from an authorized Kramer Electronics reseller. If this product is returned under this limited warranty, a return authorization number, obtained from Kramer Electronics, will be required. You may also be directed to an authorized reseller or a person authorized by Kramer Electronics to repair the product.

If it is decided that this product should be returned directly to Kramer Electronics, this product should be properly packed, preferably in the original carton, for shipping. Cartons not bearing a return authorization number will be refused.

Limitation on Liability

THE MAXIMUM LIABILITY OF KRAMER ELECTRONICS UNDER THIS LIMITED WARRANTY SHALL NOT EXCEED THE ACTUAL PURCHASE PRICE PAID FOR THE PRODUCT. TO THE MAXIMUM EXTENT PERMITTED BY LAW, KRAMER ELECTRONICS IS NOT RESPONSIBLE FOR DIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM ANY BREACH OF WARRANTY OR CONDITION, OR UNDER ANY OTHER LEGAL THEORY. Some countries, districts or states do not allow the exclusion or limitation of relief, special, incidental, consequential or indirect damages, or the limitation of liability to specified amounts, so the above limitations or exclusions may not apply to you.

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IF ANY PRODUCT TO WHICH THIS LIMITED WARRANTY APPLIES IS A "CONSUMER PRODUCT" UNDER THE MAGNUSON-MOSS WARRANTY ACT (15 U.S.C.A. §2301, ET SEQ.) OR OTHER APPLICABLE LAW, THE FOREGOING DISCLAIMER OF IMPLIED WARRANTIES SHALL NOT APPLY TO YOU, AND ALL IMPLIED WARRANTIES ON THIS PRODUCT, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR THE PARTICULAR PURPOSE, SHALL APPLY AS PROVIDED UNDER APPLICABLE LAW.

Other Conditions

This limited warranty gives you specific legal rights, and you may have other rights which vary from country to country or state to state.

This limited warranty is void if (i) the label bearing the serial number of this product has been removed or defaced, (ii) the product is not distributed by Kramer Electronics or (iii) this product is not purchased from an authorized Kramer Electronics reseller. If you are unsure whether a reseller is an authorized Kramer Electronics reseller, please visit our Web site at www.kramerelectronics.com or contact a Kramer Electronics office from the list at the end of this document.

Your rights under this limited warranty are not diminished if you do not complete and return the product registration form or complete and submit the online product registration form. Kramer Electronics thanks you for purchasing a Kramer Electronics product. We hope it will give you years of satisfaction.

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For the latest information on our products and a list of Kramer distributors, visit our Web site where updates to this user manual may be found.

We welcome your questions, comments, and feedback.

Web site: www.kramerelectronics.com

E-mail: info@kramerel.com



SAFETY WARNING

Disconnect the unit from the power supply before opening and servicing



P/N: 2900-300754



Rev: 5